Use estimation as a method for checking mental calculations
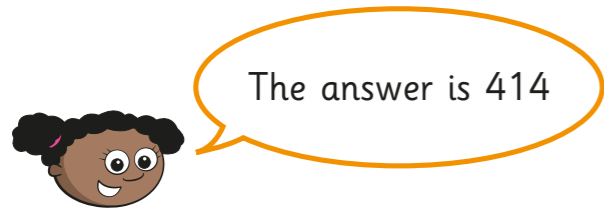
1 Whitney is trying to work out 119 + 395 in her head.

> The answer is 414

a) Complete the sentences to estimate the answer.
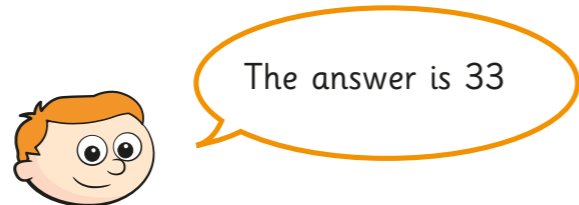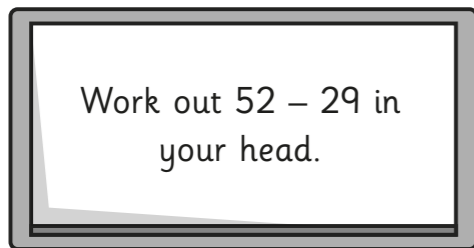
119 is close to [ ]

395 is close to [ ]

[ ] + [ ] = [ ]

b) Do you think Whitney is correct, based on your estimate? _____

Explain your answer.

2 Mrs Rose has given her class a question.

> Work out 52 − 29 in your head.

> The answer is 33

a) Use estimation to show that Ron is incorrect.

_____

_____

b) Discuss with a partner what mistake you think Ron made.

3 For each calculation:

- estimate the answer to the question in your head
- work out the answer in your head.

Complete the table.

Calculation	My estimate	My answer
900 + 3,900		
701 − 295		
99 × 3		
196 ÷ 2		

4 Use estimation to explain why the statements must be true.

a)

459 + 972 < 1,500

_____

_____

b)

32 × 6 > 180

_____

_____

c)

$\sqrt{69} > 8$

_____

_____

d)

$$\sqrt{4,500} < 70$$

_____

_____

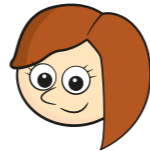**5** Some students have tried to work out some calculations mentally.

a)

19 × 7

The answer is 133

Do you agree with Rosie? _____
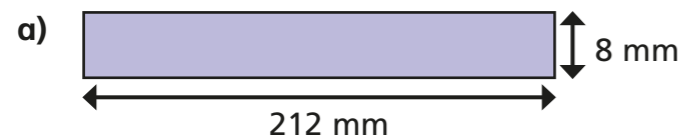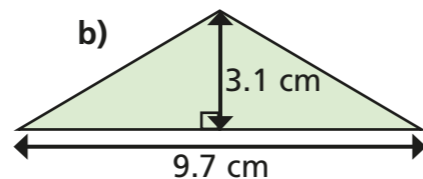
Use estimation to explain your answer.

_____

_____

b)

39 × 5

The answer is 205

Do you agree with Amir? _____

Use estimation to explain your answer.

_____

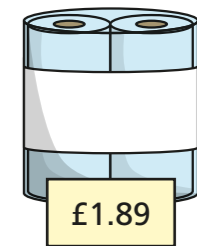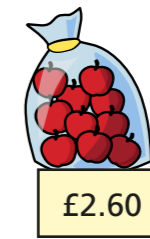_____

6 Estimate the areas of the shapes.

a)

8 mm

212 mm

[ ] mm²

b)

3.1 cm

9.7 cm

[ ] cm²

7 Mrs Lee wants to buy these items.

milk £1.09   £3.95   £2.60   £1.89
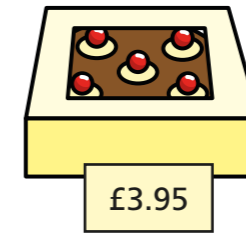
She has £10 to spend.

Use estimation to decide if Mrs Lee has enough money.

Tick your answer.

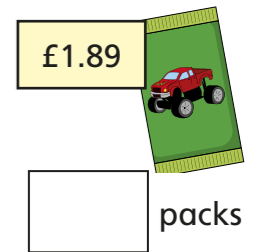**She has enough money.**   **She doesn't have enough money.**

Compare estimates with a partner.

8 Filip receives £10 for his birthday.

£1.89

He wants to buy as many packs of cards as he can.

a) Estimate how many packs he can buy.

[ ] packs

b) Explain how you arrived at your estimate.

_____

_____

9 Estimate the answers to the calculations.

£3.85 + £2.12 + £3.44 $\frac{2}{5}$ of 59   18.94 × 9

[ ]   [ ]   [ ]